Method and Apparatus for Optical Measurement of the Leading Edge Position of an Airfoil

Abstract of Disclosure

Apparatus (10) for determining the leading edge (E) of an airfoil (A) includes a first light source (S1) illuminating a portion of the airfoil including its leading edge and a first camera (M1) acquiring an image of the illuminated portion of the airfoil. A second light source (S2), spaced apart from the first light source, also illuminates a portion of the airfoil including its leading edge. A second camera (M2) acquires an image of the portion of the airfoil illuminated by the second light source. The location (N2) of the second light source and the first camera are coincident in space as are the location (N1) of the first light source and the second camera. An image processor (P) processes the respective images obtained from the two cameras to locate the leading edge of the object. In doing so, the processor utilizes similarities in illumination of the airfoil by the respective light sources and occlusion boundaries of the respective illuminated portions of the airfoil.